JVP, rales, edema, S_3, creatinine, cardiothoracic ratio, and the use of digoxin, ACE inhibitors, diuretics and potassium supplements. Among the Validation Set, the predicted EF was within 0.05 of a patient's measured numeric value in only 44% of cases. However, a predicted EF cut point was found, below which 97.1% of patients had a measured EF ≤ 0.45 (specificity = 89%, see table).

True EF	Predicted Low	Predicted High	Total
≤0.45	1253 (97.1%)	1763 (84.7%)	3016 (89.4%)
>0.45	38 (2.9%)	318 (15.3%)	356 (10.6%)
Total	1291	2081	3372

Conclusions: 1) Clinical features distinguish a subset of patients whose EF is almost always ≤0.45, and, 2) the other subset, a larger group, will require actual measurement of EF if it is to be known.

1044-39 Brain Natriuretic Peptide Is a Cost-effective Diagnostic Marker of Ventricular Dysfunction

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There is growing interest in the use of natriuretic peptides as serum markers of LV dysfunction. To determine if this approach is cost-effective, we analyzed Brain natriuretic peptide (BNP) and ejection fraction (EF) in 466 consecutive out-patients (pts) referred for echo specifically to check EF because of symptoms of or risk factors for LV dysfunction. The prevalence of significant LV dysfunction (EF <35%) was 4.7%. An abnormal BNP was defined as >37 pg/ml which is >2 SD above the mean value in normals. The sensitivity and specificity of an abnormal BNP for the detection of EF < 35% were 90% and 61%. The probability of an EF < 35% with an abnormal BNP was 10.2%. The probability of an EF < 35% with a normal BNP was 0.8%. Of the 466 pts, 189 had an abnormal BNP. Using these data and charges for 2-D echo ($463.00) and BNP ($50.00), a simple cost analysis was performed. In a hypothetical population of 1000 out-pts at risk for LV dysfunction with a moderate (4.7%) prevalence of LV dysfunction, using BNP to screen for LV dysfunction and reserving echo for those with an abnormal value for BNP would result in a 51% cost savings (approximately $225,000 in 1000 pts) as compared to performing echo on all pts. The risk of LV dysfunction in a patient with a normal BNP value would be quite low (~ 1%) in a population with this prevalence. Measuring serum levels of BNP represents a cost effective means of effectively screening pts for LV systolic dysfunction.

1044-40 Do all Patients With Congestive Heart Failure Need Diagnostic Coronary Arteriography?

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The most common etiology of congestive heart failure (CHF) in the United States is coronary artery disease. However, the role of diagnostic coronary arteriography (CATH) for the primary indication of heart failure and no previous history of myocardial infarction (MI) or known previous coronary disease (PCAD) is uncertain. This is important as heart failure secondary to coronary disease may be reversible with revascularization. Thus in 392 patients with no MI or PCAD who underwent CATH, 251 (64%) had no CAD & 141 (36%) had CAD. Multivariate correlates of CAD were age (odds ratio 1.68 per decade), male (odds ratio 2.29) and diabetes (odds ratio 4.74) (see table).

Multivariate Correlates of CAD in Patients with CHF

	CAD Absent (n = 251)	CAD Present (n = 141)	P Value
Age	56 ± 15	65 ± 11	0.0001
Female	50%	38%	0.03
Diabetes	15%	44%	0.0001

Chest pain was not predictive of coronary disease in this population. For a 40 year old woman without diabetes the probability of CAD was 7.38% while for a 60 year old man with diabetes the probability of CAD was 70.9%. These data suggest that patients with heart failure may be stratified, similar to patients with chest pain, with low risk patients needing no further testing, intermediate risk patients requiring non-invasive evaluation to modify the probability of CAD prior to the decision on performing or not performing CATH and high risk patients often requiring CATH for anatomic definition and possible revascularization.

1045 Postoperative Atrial Fibrillation: Mechanisms and Management

Monday, March 30, 1998, Noon–2:00 p.m.
Georgia World Congress Center, West Exhibit Hall Level
Presentation Hour: 1:00 p.m.–2:00 p.m.

1045-161 Feasability of Synchronised Bi-Atrial Pacing for Preventing of Atrial Fibrillation After Coronary Artery Bypass Surgery – A Pilot Study

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Background: Synchronous pacing of the right and left atria has been shown to prevent paroxysmal atrial fibrillation (AF) in patients with prolonged intra-atrial conduction. We designed a prospective randomised trial as a pilot study to determine the feasability of using synchronised bi-atrial pacing (BAP) via epicardial wires to prevent AF after cardiopulmonary bypass.

Methods: 78 patients undergoing first-time CABG, in sinus rhythm preoperatively with no prior history of AF, were randomised to post-operative BAP (AAT mode) or control. Pairs of epicardial wires were placed on each atrium (RA, LA). Pacing was commenced within 4 hours of surgery and continued for 96 hours. Pacing parameters were measured daily. Episodes of AF > 30 mins or requiring treatment were noted.

Results: No differences in age, other baseline demographics or clinical variables were detected between the groups. Atrial electrograms (AE) and diastolic thresholds (DT) in the BAP group were as follows (mean ± SEM):

Time	RA AE (mV)	LA AE (mV)	RA DT (V)	LA DT (V)
0	2.13 (± 0.43)	2.10 (± 0.34)	1.42 (± 0.22)	1.10 (± 0.17)
48	2.40 (± 0.60)	2.47 (± 0.27)	1.58 (± 0.16)	1.35 (± 0.19)
96	1.82 (± 0.27)	2.24 (± 0.22)	2.34 (± 0.21)	1.94 (± 0.27)

Synchronised BAP was successfully maintained in all cases to 96 hours with no complications. The incidence of AF was 18.2% with BAP vs 26.7% in controls (p = 0.13), with a significant reduction in the median duration of breakthrough episodes of AF (10 hrs vs 48 hrs, p = 0.035).

Conclusion: BAP in the post-operative period is technically feasible, easily maintained and produced favourable trends in the incidence and duration of AF. A larger randomised trial is being conducted to clarify the clinical utility of this technique.

1045-162 Atrial Pacing in the Prevention of Atrial Fibrillation After Cardiac Surgery: Results of the Second Post Operative Pacing Study (POPS-2)

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Background: Previous studies have shown that AAI pacing fails to suppress atrial fibrillation (AF) after coronary artery bypass surgery (CABG).

Objectives: To determine if atrial pacing (AP) using a pacemaker with enhanced atrial sensing, automatic mode-switching (AMS) and consistent atrial overdrive pacing capabilities would prevent postoperative AF.

Methods: 86 patients (pts) were randomized to AP (Paced) vs. no AP (Control). All pts were connected via temporary epicardial wires to a dual chamber rate-responsive pacemaker (Medtronic Thera DR MN 4940) with AMS capabilities enabled and event counters. Paced pts were programmed to AP at a lower rate of 80 ppm and an upper rate limit of 130 ppm with the use of a consistent AP algorithm that maintained AP at 50 ms above the native atrial rate. The primary endpoint was development of AF of duration >10 minutes requiring pharmacological or electrical intervention.

Results: AF occurred in 11/43 (34%) Paced and 11/43 (34%) Control pts, p = 1.0. Pts with AF were significantly older (68 ± 7.7 vs. 62 ± 8.7 yrs, p = 0.007). AF occurred in 9/22 (41%) Paced and 8/20 (40%) Control pts <65 yrs old (p = 0.9) and 2/21 (10%) Paced and 3/23 (13%) Control pts >65 yrs old (p = 1.0). The use of post-operative β-blockers was not associated with decreased post-operative AF: 15/59 (25%) pts with and 7/27 (26%) without post-operative β-blockers had AF, p = 0.96. Pre-operative β-blocker use or β-blocker withdrawal did not affect the incidence of AF.

Conclusions: Atrial overdrive pacing does not prevent AF after CABG and thus should not be routinely advocated for suppression of postoperative AF.